



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
SEPTEMBER 5, 1996, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM**

Present:	T. A. Coleman J. J. Kanillopoulos (J. D. Culp) D. L. Smiley (J. W. Reincke) G. J. Kavalakis (S. E. Hohl)	C. Roberts C. T. Maki W. C. Turner C. J. Arnold	L. R. Brown P. F. Miller E. D. Winkler T. Fort
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Guest: Dr. G. Baladi (MSU)

OLD BUSINESS

1. Approval of the Minutes of the August 2, 1996, Meeting -T. A. Coleman

Minutes of the August 2, 1996, meeting were approved as written.

2. Implementation Plan for Mechanistic Design - D. L. Smiley

Additional information was provided as a follow-up to the subject presentation and discussion held at the August 2, 1996, meeting as requested to address two areas: 1.) a more distinct explanation of the difference between "empirical" and "mechanic" design methods, and 2.) better explain how current resources would be used in a new "mechanistic process." A lengthy discussion pursued in response to several questions raised by committee members.

ACTION: The EOC approved and supports the proposed recommendation in concept, with the stipulation that efforts be continued to develop an implementation plan and provide quarterly updates to the committee.

3. Warranties: Bituminous Construction Projects or Concrete - P. F. Miller/C. J. Arnold

An update on ongoing activities was presented by the Design and Construction Divisions. Design is establishing a committee with representatives from MDOT Bituminous Advisory Committee (i.e. B. Turner, J. Kalmbach, D. Coleman, D. Smiley, E. Winkler, District Representative, Michigan Asphalt Paving Association, Michigan Concrete Association, and Wayne and/or Oakland Counties) to explore opportunities/alternatives, and present recommendations that address the need to contract for projects having 10-15 years life, with a suitable warranty period. The Construction Division is continuing its efforts to develop a plan for implementation to engage consultant professional service contracts to provide for administrative oversight on construction and maintenance type projects. A status report will be presented at the October meeting.

4. Rumble Strip Presentation - L. R. Brown

The Maintenance Division is in the process of investigating methods as part of their efforts to develop alternatives to provide for preservation of rumble strips. A presentation of methods and recommendations for consideration by the committee for implementation during the 1997 construction season will be forthcoming.

5. Galvanized Guardrail - T. A. Coleman

An overview of the meeting held with the manufacturer of pre-galvanized guardrail was presented.

ACTION: The Maintenance Division will install 16 panels of pre-galvanized guardrail, provided by the manufacturer, in the field for evaluation. The Materials and Technology Division will provide assistance for the conduct of field studies to determine the impact of corrosion resulting from salt spray in the area of the lap joints.

6. **Use of Lightweight Trailer Sign Support - J. J. Kanillopoolos**

This item was tabled for the next committee meeting.

7. **AASHTO-SHRP Research - C. Roberts**

An update on MDOT SHRP activities was presented, as well as outlining the state's accomplishments to date on the implementation of SHRP products.

ACTION: The Materials and Technology Division will provide the committee with continued progress on SHRP implementation on a regular basis.

NEW BUSINESS

1. **Research Report R-1342, *Inspection and Repair of High-Mast Luminaires* - C. Roberts**

In late 1991, an investigation was initiated with the objective of determining the overall condition of Michigan's high-mast luminaire (HML) structures. Two hundred twenty-four of MDOT's high-mast luminaire structures were made of A-588 weathering steel now ranging in age from 10 to 20 years old. This factor, combined with reports from the Maryland Department of Transportation concerning corrosion and cracking of their A-588 weathering steel HML poles, provided the basis for initiating this technical investigation. Subsequent reports from the states of Indiana and Illinois documenting their experiences with corrosion and cracking of A-588 weathering steel HML poles prompted the division to refine and intensify its inspection.

The findings and recommendations were presented for consideration and approval by the committee.

ACTION: The EOC returned the report for editing to succinctly convey the subject material and resubmittal for final approval.

2. **Contract Research Report 94A-0031, *Adoption of a Rapid Test for Determining Aggregate Durability in Portland Cement Concrete* - D. L. Smiley**

Michigan needed a more rapid test procedure to identify concrete coarse aggregates with poor durability properties without making and testing concrete specimens. The entire current process takes about 2.5 months and requires special equipment, is laborious and controversial with Michigan aggregate suppliers.

A research project was awarded in 1993 to evaluate the Washington Hydraulic Fracture Test (WHFT) as a possible supplemental procedure or as a replacement procedure for the existing series of Michigan Test Methods (MTMs 113-115). The WHFT takes about one week (50 cycles) to complete. The project team consisted of Dr. Will Hansen from the University of Michigan, as principal investigator, and Dr. Don Janssen from the University of Washington, and Dr. Mark Snyder from the University of Minnesota as sub-consultants. The WHFT procedure was initially developed as part of the Strategic Highway Research Program under contract with Dr. Janssen and Dr. Snyder.

Project Objectives/Scope - The primary study objective was to determine if the WHFT procedure could be used as an acceptance test for concrete coarse aggregate. The project was to address any necessary modifications to the test equipment and/or test procedures from the SHRP study to correlate with Michigan's accepted practice of freeze-thaw testing with concrete specimens. Important aspects of the research scope included:

- Conducting a comprehensive literature review of freeze-thaw testing and the development of the WHFT procedure.
- Establishing a controlled testing plan using representative Michigan aggregates to compare WHFT results with durability values from concrete specimens.
- Determining and quantifying any variables, including aggregate type/source, operator, pre-conditioning, and separate test devices that effects WHFT test results.
- Developing a modified WHFT procedure for Michigan's conditions.
- Constructing and installing a test device for Michigan's use and training personnel on its operation.

ACTION: The EOC approved the request to accept the final report for normal department distribution and to fulfill request from other interested parties outside of Michigan, with the stipulation that a follow-up to the recommendations for future use within MDOT be presented to the committee for consideration.

3. **Contract Report 94-1520, Roadway Warning System - J. J. Kanillopoolos**

An overview of the Roadway Warning System Report and a request for approval was made.

ACTION: The EOC approved the report for use as an internal report **only**, and not for external distribution.

(Signed Copy on File at M&T)

Calvin Roberts, Secretary
Engineering Operations Committee

Attachment

cc: EOC Members
District Engineers
R. A. Welke

R. J. Risser, Jr. (MCPA)

L. K. Heinig

T. Adams (MCA)

D. L. Coleman
D. L. Smiley
L. E. DeFrain
I. B. Patel
S. Bower

A. C. Milo (MRBA)
J. Becsey (MAPA)
G. L. Mitchell
M. Newman (MAA)
M. Frierson

G. H. Grove
R. W. Muller
G. J. Bukoski
J. Steele (FHWA)
R. J. Lippert, Jr.

R. D. Till
R. E. Nordlund
C. W. Whiteside
K. Rothwell
C. Libiran